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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,471	08/07/2008	Yuko Fukawa	81872.0121	1649

26021 7590 11/19/2009
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EXAMINER

AYAD, TAMIR

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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11/19/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/597,471	Applicant(s) FUKAWA ET AL.	
	Examiner TAMIR AYAD	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 8-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 15, it is unclear whether the recitation "said plurality of solar cell elements" refers to the first solar cell element group or refers to the second solar cell element group. For the purposes of this office action, the recitation will be treated as if it refers to the second solar cell element group. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Shihobi (JP 2002-168062).

Regarding claim 1, Shihobi discloses a solar cell module (title), comprising; a front surface member having translucency (translucent plate 1, Fig. 4, [0020]), a rear surface member (translucent plate 1 on rear face, Fig. 4), an intermediate member between said front surface member and said rear surface member (Fig. 4, thermal break 51 and film 4, [0034]), a first solar cell element group in which a plurality of solar cell elements are electrically connected (Fig. 3, [0035]), disposed between said front surface member and said intermediate member (Fig. 4, [0010]), and a second solar cell element group in which a plurality of solar cell elements are electrically connected (Fig. 3, [0035]), disposed between said rear surface member and said intermediate member (Fig. 4, [0010]), wherein said intermediate member (4 and 51, Fig. 4, [0034]) comprises a material that reflects light ([0008]).

Regarding claim 2, Shihobi discloses all the claim limitations as set forth above, and further discloses wherein said plurality of solar cell elements are connected in series in both said first solar cell element group and said second solar cell element group ([0023], and both solar cell element groups are electrically insulated through said intermediate member (Fig. 4, items 4 and 51, [0027], [0036]).

Regarding claim 3, Shihobi discloses all the claim limitations as set forth above, and further discloses wherein said rear surface member is a material having translucency ([0022]).

Regarding claim 12, Shihobi discloses all the claim limitations as set forth above. Shihobi further discloses wherein a thermoplastic resin (EVA, 3, Fig. 4,

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[0004]) is interposed between the intermediate member (4 and 51, Fig. 4) and the first or second solar cell element group (Fig. 4).

Regarding claim 13, Shihobi discloses all the claim limitations as set forth above. Further, Shihobi discloses wherein the intermediate member (4 and 51) contacts directly both at a light receiving surface side filler (3, Fig. 4) and a rear surface side filler (3, Fig. 4).

Regarding claim 14, Shihobi discloses all the claim limitations as set forth above. Shihobi further discloses wherein a light receiving surface side filler (3, Fig. 4) is fusion bonded ([0004] L6) to integrate with the intermediate member ([0004] L4-8) and a rear surface side filler (3, Fig. 4) is fusion bonded ([0004] L6) to integrate with the intermediate member ([0004] L4-8).

Regarding claim 15, Shihobi discloses all the claim limitations as set forth above. Further, Shihobi discloses wherein said solar cell elements have single-sided power generation ([0007] L9-10).

Regarding claim 16, Shihobi discloses all the claim limitations as set forth above. Shihobi further discloses wherein a light receiving surface side filler (3, Fig. 4) is interposed between said first solar cell element group (2a, Fig. 4) and said intermediate member (4 and 51, Fig. 4).

Regarding claim 17, Shihobi discloses all the claim limitations as set forth above. Shihobi further discloses wherein a rear surface side filler (3, Fig. 4) is interposed between said second solar cell element group (2b) and said intermediate member (4 and 51, Fig. 4).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shihobi (JP 2002-168062) in view of Tetsuo et al. (JP 11-31834).

Regarding claim 8, modified Shihobi discloses all the claim limitations as set forth above.

Shihobi does not explicitly disclose wherein a solar cell element comprising said first solar cell element group and a solar cell element comprising said second solar cell element group are disposed symmetrically with said intermediate member as the reference position. However, the solar module depicted by Shihobi appears symmetrical (Fig. 4).

Tetsuo discloses two or more photovoltaic cells on both sides of the middle sheet of glass with fixed spacing ([0016]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a symmetric design as explicitly taught by Tetsuo into the device of Shihobi because Tetsuo discloses the advantages of the design, specifically the manufacturing of a larger size, more efficient solar cell module ([0004], [0005]).

Regarding claim 9, modified Shihobi discloses all the claim limitations as set forth above.

Shihobi does not explicitly disclose wherein a solar cell element comprising said first solar cell element group and a solar cell element comprising said second solar cell element group are disposed unsymmetrically with said intermediate member as the reference position. However, it would have been obvious to one of ordinary skill in the art at the time of the invention that since Shihobi is silent with regards to whether the groups are symmetric, and since Tetsuo specifies symmetry of the groups ([0016]), that the assumption that the groups of Shihobi are disposed unsymmetrically with said intermediate member as the reference position is valid due to the absence of the specification of symmetry by Shihobi.

8. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shihobi (JP 2002-168062) as applied to claim 1 above, in view of Kimura et al. (US 6,448,489).

Regarding claim 10, modified Shihobi discloses all the claim limitations as set forth above.

Modified Shihobi does not explicitly disclose a first solar cell string having connected said first solar cell element group, and a second solar cell string having connected said second solar cell element group, a power conversion means for converting direct-current power to alternating-current power as well as controlling so that direct-current power is output at the maximum power point of these first and second solar cell string, and a voltage adjustment means for adjusting direct-current voltage that is output from said second solar cell string and supplying the voltage between said first solar cell string and said voltage adjustment means, wherein said voltage adjustment means adjusts the output voltage of said second solar cell string so that it coincides with the output voltage of said first solar cell string.

Kimura discloses a first solar cell string having connected said first solar cell element group and a second solar cell string having connected said second solar cell element group (Fig. 1, abstract, C2/L63-64, C3/L5-7), a power conversion means for converting direct-current power to alternating-current power (Fig. 1, abstract) as well as controlling so that direct-current power is output at the maximum power point of these first and second solar cell string (Fig. 9, C2/L63-67) and a voltage adjustment means for adjusting direct-current voltage that is output from said second solar cell string and supplying the voltage between said first solar cell string and said voltage adjustment means (C3/L15-21) wherein said voltage adjustment means adjusts the output voltage of said

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second solar cell string so that it coincides with the output voltage of said first solar cell string (C3/L15-21).

Shihobi and Kimura are combinable because they are concerned with the same field of endeavor, namely solar cells.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the connectivity, power conversion, as well as voltage adjustment of Kimura to the device as Shihobi because Kimura discloses that the incorporation of these elements decreases the weight of the system and increases power conversion efficiency (C2/L56-57).

Regarding claim 11, modified Shihobi discloses all the claim limitations as set forth above.

Shihobi does not explicitly disclose wherein said voltage adjustment means adjusts the direct-current voltage that is output from said second solar cell string based on the voltage which is to be the maximum electric power of said second solar cell string to coincide with the output voltage of said first solar cell string.

Kimura discloses wherein said voltage adjustment means adjusts the direct-current voltage that is output from said second solar cell voltage which is to be the maximum electric power of said second solar cell string to coincide with the output voltage of said first solar cell string (C3/L15-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the connectivity, power conversion, as well as voltage adjustment of Kimura to the device as Shihobi because Kimura discloses

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that the incorporation of these elements decreases the weight of the system and increases power conversion efficiency (C2/L56-57).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of

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35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1-3, 9, 12-13, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikegami et al. (JP 55-141764 A) in view of Shihobi (JP 2002-168062).

Regarding claim 1, Ikegami discloses a solar cell module (see figure on P377), comprising: a front surface member having translucency (1, glass, figure on P377), a rear surface member (1, glass, figure on P377), an intermediate member (5 – silver electrode and 7 - adhesive resin, figure on P377) between said front surface member and said rear surface member, a first solar cell element group (CdS/Cu₂S; groups 2 and 4 in figure on P377) disposed between said front surface member (1) and said intermediate member (5 and 7) and a second solar cell element group (CdS/Cu₂S; groups 2 and 4 in figure on P377) disposed between rear surface member (1) and said intermediate member (5 and 7), wherein said intermediate member (5 and 7) comprises a material that reflects light (adhesive resin on P376).

Ikegami does not explicitly disclose a first solar cell element group in which a plurality of solar cell elements are electrically connected and a second solar cell element group in which a plurality of solar cell elements are electrically connected.

Shihobi discloses a solar cell module ([0005]) comprising a front surface member having translucency (Fig. 2, translucent plate 1, [0020]) and a rear surface member ([0022]), and further discloses a first solar cell element group in

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which a plurality of solar cell elements are electrically connected (Fig. 3, [0035]) and a second solar cell element group in which a plurality of solar cell elements are electrically connected (Fig. 3, [0035]).

Ikegami and Shihobi are combinable because they are concerned with the same field of endeavor, namely solar cells.

It would have been obvious to one of ordinary skill in the art at the time of the invention to electrically connect a plurality of the first solar cell element groups of Ikegami, as disclosed by Shihobi, because electrically connecting solar cells increases the modules capacity for generating power. Similarly, it would have been obvious to one of ordinary skill in the art at the time of the invention to electrically connect a plurality of the second solar cell element groups of Ikegami, as disclosed by Shihobi, because electrically connecting solar cells increases the modules capacity for generating power.

Regarding claim 2, modified Ikegami discloses all the claim limitations as set forth above. Additionally, Shihobi discloses wherein said plurality of solar cell elements are connected in series in both said first solar cell element group and said second solar cell element group ([0023], and both solar cell element groups are electrically insulated through an intermediate member (Fig. 4, item 51, [0027], [0036]).

Regarding claim 3, modified Ikegami discloses all the claim limitations as set forth above. Further, Ikegami discloses wherein said rear surface member is a material having translucency (1, glass, figure on P377).

Regarding claim 9, modified Ikegami discloses all the claim limitations as set forth above.

Ikegami does not explicitly disclose wherein a solar cell element comprising said first solar cell element group and a solar cell element comprising said second solar cell element group are disposed unsymmetrically with said intermediate member as the reference position.

It would have been obvious to one of ordinary skill in the art at the time of the invention that since modified Ikegami is silent with regards to whether the groups are symmetric, that the assumption that the groups of modified Ikegami are disposed unsymmetrically with said intermediate member as the reference position is valid due to the absence of the specification of symmetry by modified Ikegami. It would have been obvious to use any of the limited arrangements, i.e. symmetric or unsymmetric, of the solar cell element groups with regard to the intermediate member.

Regarding claim 12, modified Ikegami discloses all the claim limitations as set forth above. Ikegami further discloses wherein a thermoplastic resin (7) is interposed between the intermediate member and the first or second solar cell element group (figure on P377).

Regarding claim 13, modified Ikegami discloses all the claim limitations as set forth above. Further, modified Ikegami discloses wherein the intermediate member (7 shown inside lead wire 6 in figure on P377) contacts directly both at a light receiving surface side filler (7 outside of lead wire 6 in figure on P377) and a rear surface side filler (7 outside of lead wire 6 in figure on P377).

Regarding claim 15, modified Ikegami discloses all the claim limitations as set forth above. Further, Ikegami discloses wherein said solar cell elements have single-sided power generation (figure on P377 shows single sided power generation). Therefore, the plurality of solar cell elements of modified Ikegami have single-sided power generation.

Regarding claim 16, modified Ikegami discloses all the claim limitations as set forth above. Ikegami further discloses wherein a light receiving surface side filler (7 outside of lead wire 6 in figure on P377) is interposed between said first solar cell element group (2) and said intermediate member (figure on P377).

Regarding claim 17, modified Ikegami discloses all the claim limitations as set forth above. Ikegami further discloses wherein a rear surface side filler (7 outside of lead wire 6 in figure on P377) is interposed between said second solar cell element group (2) and said intermediate member (figure on P377).

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikegami et al. (JP 55-141764 A – English translation) in view of Shihobi (JP 2002-168062 – English translation) as applied to claim 1 above, further in view of Tetsuo et al. (JP 11-31834 - English translation).

Regarding claim 8, modified Ikegami discloses all the claim limitations as set forth above.

Ikegami does not explicitly disclose wherein a solar cell element comprising said first solar cell element group and a solar cell element comprising said second solar cell element group are disposed symmetrically with said

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intermediate member as the reference position. However, the solar module depicted by Ikegami appears symmetrical (figure on P377).

Tetsuo discloses two or more photovoltaic cells on both sides of the middle sheet of glass with fixed spacing ([0016]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a symmetric design as explicitly taught by Tetsuo into the device of modified Ikegami because Tetsuo discloses the advantages of the design, specifically the manufacturing of a larger size, more efficient solar cell module ([0004], [0005]).

14. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikegami et al. (JP 55-141764 A – English translation) in view of Shihobi (JP 2002-168062 – English translation) as applied to claim 1 above, further in view of Kimura et al. (US 6,448,489).

Regarding claim 10, modified Ikegami discloses all the claim limitations as set forth above.

Modified Ikegami does not explicitly disclose a first solar cell string having connected said first solar cell element group, and a second solar cell string having connected said second solar cell element group, a power conversion means for converting direct-current power to alternating-current power as well as controlling so that direct-current power is output at the maximum power point of these first and second solar cell string, and a voltage adjustment means for adjusting direct-current voltage that is output from said second solar cell string and supplying the voltage between said first solar cell string and said voltage

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adjustment means, wherein said voltage adjustment means adjusts the output voltage of said second solar cell string so that it coincides with the output voltage of said first solar cell string.

Kimura discloses a first solar cell string having connected said first solar cell element group and a second solar cell string having connected said second solar cell element group (Fig. 1, abstract, C2/L63-64, C3/L5-7), a power conversion means for converting direct-current power to alternating-current power (Fig. 1, abstract) as well as controlling so that direct-current power is output at the maximum power point of these first and second solar cell string (Fig. 9, C2/L63-67) and a voltage adjustment means for adjusting direct-current voltage that is output from said second solar cell string and supplying the voltage between said first solar cell string and said voltage adjustment means (C3/L15-21) wherein said voltage adjustment means adjusts the output voltage of said second solar cell string so that it coincides with the output voltage of said first solar cell string (C3/L15-21).

Ikegami and Kimura are combinable because they are concerned with the same field of endeavor, namely solar cells.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the connectivity, power conversion, as well as voltage adjustment of Kimura to the device of modified Ikegami because Kimura teaches that the incorporation of these elements decreases the weight of the system and increases power conversion efficiency (C2/L56-57).

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Regarding claim 11, modified Ikegawi discloses all the claim limitations as set forth above.

Ikegawi does not explicitly disclose wherein said voltage adjustment means adjusts the direct-current voltage that is output from said second solar cell string based on the voltage which is to be the maximum electric power of said second solar cell string to coincide with the output voltage of said first solar cell string.

Kimura discloses wherein said voltage adjustment means adjusts the direct-current voltage that is output from said second solar cell voltage which is to be the maximum electric power of said second solar cell string to coincide with the output voltage of said first solar cell string (C3/L15-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the connectivity, power conversion, as well as voltage adjustment of Kimura to the device of modified Ikegawi because Kimura discloses that the incorporation of these elements decreases the weight of the system and increases power conversion efficiency (C2/L56-57).

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikegami et al. (JP 55-141764 A – English translation) in view of Shihobi (JP 2002-168062 – English translation) as applied to claim 1 above, further in view of Ouchida et al. (US 6,525,264).

Regarding claim 14, modified Ikegawi discloses all the claim limitations as set forth above.

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While Ikegami does disclose wherein a light receiving surface side filler (7 outside of lead wire 6 in figure on P377) is integrated with the intermediate member (7 shown inside lead wire 6 in figure on P377) and a rear surface side filler (7 outside of lead wire 6 in figure on P377) is integrated with the intermediate member (figure on P377), Ikegami does not explicitly disclose wherein the filler is fusion bonded to integrate with the intermediate member.

Ouchida discloses a solar cell module (title) and further discloses the use of fusion bonding to integrate layers in a solar cell (C7/L40).

Ikegami and Ouchida are combinable because they are concerned with the same field of endeavor, namely solar cells.

It would have been obvious to one of ordinary skill in the art at the time of the invention to form the integrated intermediate member and filler as disclosed in Ikegami by fusion bonding as disclosed by Ouchida, because fusion bonding is used to establish strong bonds between resin layers.

16. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikegami et al. (JP 55-141764 A) in view of Shihobi (JP 2002-168062) as applied to claim 1 above, further in view of Kinoshita et al. (US 6,552,258) further in view of Straub (US 4,036,206).

Regarding claim 18, modified Ikegami discloses all the claim limitations as set forth above.

Ikegami does not disclose wherein said intermediate member comprises a steel plate colored white.

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Kinoshita discloses a solar cell module (title) with a plurality of solar cell elements and further discloses a steel plate (2, Fig. 5, C4/L33) as a bottom member of a solar cell module.

Ikegami and Kinoshita are combinable because they are concerned with the same field of endeavor, namely solar cells.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the silver electrode layer (5) of the intermediate member of Ikegami with the steel plate disclosed by Kinoshita, because steel provides more structural support than silver for a solar module.

Modified Ikegami does not explicitly disclose a steel plate colored white.

Straub discloses a solar energy absorption device and further discloses a steel plate colored white (C4/L17-18).

Ikegami and Straub are combinable because they are concerned with the same field of endeavor, namely solar energy absorption devices.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the steel plate of the intermediate member of modified Ikegami with the steel plate colored white disclosed by Straub, because as taught by Straub, the plate shows very good solar selectivity (C4/L25-26).

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikegami et al. (JP 55-141764 A) in view of Shihobi (JP 2002-168062) as applied to claim 1 above, further in view of Mishima et al. (JP 409260696A – English abstract).

Regarding claim 19, modified Ikegami discloses all the claim limitations as

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set forth above.

While Ikegami does disclose wherein the intermediate member comprises silver electrodes (5), Ikegami does not explicitly disclose wherein said intermediate member is mirror-finished.

Mishima discloses a solar cell and further discloses wherein the surfaces of the electrodes are mirror-finished (abstract L14).

Ikegami and Mishima are combinable because they are concerned with the same field of endeavor, namely solar cells.

It would have been obvious to one of ordinary skill in the art at the time of the invention to mirror-finish the silver electrodes disclosed by Ikegami as disclosed by Mishima, because as taught by Mishima, mirror-finished electrodes show excellent light reflecting characteristics (abstract L14-15).

18. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikegami et al. (JP 55-141764 A) in view of Shihobi (JP 2002-168062) as applied to claim 1 above, further in view of Konno et al. (JP 2000-208797 A).

Regarding claim 20, modified Ikegami discloses all the claim limitations as set forth above.

Ikegami does not explicitly disclose wherein said intermediate member comprises a PVF sheet with alumina evaporated thereon.

Konno discloses a solar cell module (title) and further discloses a member comprises a PVF sheet ([0009] L12) with alumina evaporated thereon ([0012] L25-26).

Ikegami and Konno are combinable because they are concerned with the same field of endeavor, namely solar cell modules.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the intermediate member disclosed in modified Ikegami with the member disclosed by Konno, because as taught by Konno, a member comprising a PVF sheet with alumina evaporated thereon has high resistance to contamination ([0009] L21) and improved adhesion properties ([0011] L5).

Regarding claim 21, modified Ikegami discloses all the claim limitations as set forth above. Additionally, Konno discloses the intermediate member of modified Ikegami comprises a laminated sheet ([0004] L9), wherein said laminated sheet comprises alumina ([0012] L26).

Response to Arguments

19. Applicant's arguments filed on July 9, 2009 have been fully considered but they are not persuasive.

Applicant argues regarding amended claim 1 that Shihobi fails to teach or suggest "said intermediate member comprises a material that reflects light." Applicant further states that in Shihobi, the intermediate member comprises air and is unable to reflect light. As discussed in the rejection above, the intermediate member of Shihobi comprises air (51) and plastic film (4). Both air and plastic film reflect light, and further, light would be reflected at the interface between air and the plastic film.

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Applicant's arguments with regard to claims 2, 3, 8, 9, 10, and 11 are not persuasive for the reason described above regarding amended claim 1.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAMIR AYAD whose telephone number is 571-270-1188. The examiner can normally be reached on Monday through Friday, 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on 571-272-1453. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T.A./
Examiner, Art Unit 1795
11/10/2009

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 1795